

SEQUENCE LISTING

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<120> RECOMBINANT VIRUSES WITH HETEROLOGOUS ENVELOPE PROTEINS

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<150> U.S. Provisional Patent Application Serial No. 60/588,379
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<150> U.S. Provisional Patent Application Serial No. 60/528,214
 <151> 2003-12-10

<150> U.S. Patent Application Serial No. 10/262,238
 <151> 2002-10-01

<150> U.S. Provisional Patent Application Serial No. 60/397,289
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 <151> 2001-10-01

<160> 4

<170> PatentIn version 3.2

<210> 1
 <211> 7
 <212> PRT
 <213> Autographa californica nucleopolyhedrovirus

<400> 1
 Arg Asn Arg Asn Arg Gln Tyr
 1 5

<210> 2
 <211> 15
 <212> PRT
 <213> Human respiratory syncytial virus

<400> 2
 Ser Arg Arg Gln Leu Ser Gly Ile Asn Asn Ile Ala Phe Ser Asn
 1 5 10 15

<210> 3
 <211> 574
 <212> PRT
 <213> Human respiratory syncytial virus

<400> 3
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Ala Val Thr Phe Cys Phe Ala Ser Gly Gln Asn Ile Thr Glu Glu Phe
 20 25 30

Tyr Gln Ser Thr Cys Ser Ala Val Ser Lys Gly Tyr Leu Ser Ala Leu
 Page 1

35 40 45
 Arg Thr Gly Trp Tyr Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile
 50 55 60
 Lys Glu Asn Lys Cys Asn Gly Thr Asp Ala Lys Val Lys Leu Ile Lys
 65 70 75 80
 Gln Glu Leu Asp Lys Tyr Lys Asn Ala Val Thr Glu Leu Gln Leu Leu
 85 90 95
 Met Gln Ser Thr Pro Pro Thr Asn Asn Arg Ala Arg Arg Glu Leu Pro
 100 105 110
 Arg Phe Met Asn Tyr Thr Leu Asn Asn Ala Lys Lys Thr Asn Val Thr
 115 120 125
 Leu Ser Lys Lys Arg Lys Arg Arg Phe Leu Gly Phe Leu Leu Gly Val
 130 135 140
 Gly Ser Ala Ile Ala Ser Gly Val Ala Val Ser Lys Val Leu His Leu
 145 150 155 160
 Glu Gly Glu Val Asn Lys Ile Lys Ser Ala Leu Leu Ser Thr Asn Lys
 165 170 175
 Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val
 180 185 190
 Leu Asp Leu Lys Asn Tyr Ile Asp Lys Gln Leu Leu Pro Ile Val Asn
 195 200 205
 Lys Gln Ser Cys Ser Ile Ser Asn Ile Glu Thr Val Ile Glu Phe Gln
 210 215 220
 Gln Lys Asn Asn Arg Leu Leu Glu Ile Thr Arg Glu Phe Ser Val Asn
 225 230 235 240
 Ala Gly Val Thr Thr Pro Val Ser Thr Tyr Met Leu Thr Asn Ser Glu
 245 250 255
 Leu Leu Ser Leu Ile Asn Asp Met Pro Ile Thr Asn Asp Gln Lys Lys
 260 265 270
 Leu Met Ser Asn Asn Val Gln Ile Val Arg Gln Gln Ser Tyr Ser Ile
 275 280 285
 Met Ser Ile Ile Lys Glu Glu Val Leu Ala Tyr Val Val Gln Leu Pro
 290 295 300
 Leu Tyr Gly Val Ile Asp Thr Pro Cys Trp Lys Leu His Thr Ser Pro
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<210> 4

<211> 511
 <212> PRT
 <213> Vesicular stomatitis virus

<400> 4

Met Lys Cys Leu Leu Tyr Leu Ala Phe Leu Phe Ile Gly Val Asn Cys
 1 5 10 15
 Lys Phe Thr Ile Val Phe Pro His Asn Gln Lys Gly Asn Trp Lys Asn
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 Val Pro Ser Asn Tyr His Tyr Cys Pro Ser Ser Ser Asp Leu Asn Trp
 35 40 45
 His Asn Asp Leu Ile Gly Thr Ala Ile Gln Val Lys Met Pro Lys Ser
 50 55 60
 His Lys Ala Ile Gln Ala Asp Gly Trp Met Cys His Ala Ser Lys Trp
 65 70 75 80
 Val Thr Thr Cys Asp Phe Arg Trp Tyr Gly Pro Lys Tyr Ile Thr Gln
 85 90 95
 Ser Ile Arg Ser Phe Thr Pro Ser Val Glu Gln Cys Lys Glu Ser Ile
 100 105 110
 Glu Gln Thr Lys Gln Gly Thr Trp Leu Asn Pro Gly Phe Pro Pro Gln
 115 120 125
 Ser Cys Gly Tyr Ala Thr Val Thr Asp Ala Glu Ala Val Ile Val Gln
 130 135 140
 Val Thr Pro His His Val Leu Val Asp Glu Tyr Thr Gly Glu Trp Val
 145 150 155 160
 Asp Ser Gln Phe Ile Asn Gly Lys Cys Ser Asn Tyr Ile Cys Pro Thr
 165 170 175
 Val His Asn Ser Thr Thr Trp His Ser Asp Tyr Lys Val Lys Gly Leu
 180 185 190
 Cys Asp Ser Asn Leu Ile Ser Met Asp Ile Thr Phe Phe Ser Glu Asp
 195 200 205
 Gly Glu Leu Ser Ser Leu Gly Lys Glu Gly Thr Gly Phe Arg Ser Asn
 210 215 220
 Tyr Phe Ala Tyr Glu Thr Gly Gly Lys Ala Cys Lys Met Gln Tyr Cys
 225 230 235 240
 Lys His Trp Gly Val Arg Leu Pro Ser Gly Val Trp Phe Glu Met Ala
 245 250 255

Asp Lys Asp Leu Phe Ala Ala Ala Arg Phe Pro Glu Cys Pro Glu Gly
 260 265 270
 Ser Ser Ile Ser Ala Pro Ser Gln Thr Ser Val Asp Val Ser Leu Ile
 275 280 285
 Gln Asp Val Glu Arg Ile Leu Asp Tyr Ser Leu Cys Gln Glu Thr Trp
 290 295 300
 Ser Lys Ile Arg Ala Gly Leu Pro Ile Ser Pro Val Asp Leu Ser Tyr
 305 310 315 320
 Leu Ala Pro Lys Asn Pro Gly Thr Gly Pro Ala Phe Thr Ile Ile Asn
 325 330 335
 Gly Thr Leu Lys Tyr Phe Glu Thr Arg Tyr Ile Arg Val Asp Ile Ala
 340 345 350
 Ala Pro Ile Leu Ser Arg Met Val Gly Met Ile Ser Gly Thr Thr Thr
 355 360 365
 Glu Arg Glu Leu Trp Asp Asp Trp Ala Pro Tyr Glu Asp Val Glu Ile
 370 375 380
 Gly Pro Asn Gly Val Leu Arg Thr Ser Ser Gly Tyr Lys Phe Pro Leu
 385 390 395 400
 Tyr Met Ile Gly His Gly Met Leu Asp Ser Asp Leu His Leu Ser Ser
 405 410 415
 Lys Ala Gln Val Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln
 420 425 430
 Leu Pro Asp Asp Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys
 435 440 445
 Asn Pro Ile Glu Leu Val Glu Gly Trp Phe Ser Ser Trp Lys Ser Ser
 450 455 460
 Ile Ala Ser Phe Phe Phe Ile Ile Gly Leu Ile Ile Gly Leu Phe Leu
 465 470 475 480
 Val Leu Arg Val Gly Ile His Leu Cys Ile Lys Leu Lys His Thr Lys
 485 490 495
 Lys Arg Gln Ile Tyr Thr Asp Ile Glu Met Asn Arg Leu Gly Lys
 500 505 510